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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/911,548	07/24/2001	John H. Jerman	A-68185/ENB	7991

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EXAMINER
LE, DANG D

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 06/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/911,548	JERMAN ET AL.	
	Examiner	Art Unit	
	Dang D Le	2834	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-95* is/are pending in the application.

4a) Of the above claim(s) *25-30,63-65 and 91-95* is/are withdrawn from consideration.

5)☒ Claim(s) *31-35 and 66-85* is/are allowed.

6)☒ Claim(s) *36-62 and 86-90* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Claims 25-30, 63-65 and 91-95 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Groups I and III, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 5.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 45-50, 55, 56 and 90 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 45, 55 and 90, it is not clear what kind of fan that the shape of the actuator has.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United

States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 36-44 and 86-90 are rejected under 35 U.S.C. 102(e) as being anticipated by Miller et al. (6,000,280).

Regarding claim 36, Miller et al. show an electrostatic microactuator (Figure 11) comprising a substantially planar substrate (18), a rotatable member (10) overlying the substrate for rotation about an axis of rotation (27) extending perpendicular to the substrate, at least one electrostatic drive assembly (left) extending substantially radially from the axis of rotation and having first and second electrostatic drive members, the first electrostatic drive member (180) being mounted on the substrate and the second electrostatic drive member (182) being coupled to the rotatable member, and not more than first and second spaced-apart springs (16, top and bottom portion), each spring having a first end portion (19, 20) coupled to the substrate and a second end portion coupled to the second electrostatic drive member for suspending the second electrostatic drive member and the rotatable member over the substrate, the second electrostatic drive member being movable in a direction of travel about the axis of rotation between first and second positions relative to the first electrostatic drive member.

Regarding claim 37, it is noted that Miller et al. also show the at least one electrostatic drive assembly being disposed between the first and second spaced-apart springs.

Regarding claim 38, it is noted that Miller et al. also show each of the first and second electrostatic drive members (170, 172) being a comb drive member provided with comb drive fingers (180, 182).

Regarding claim 39, it is noted that Miller et al. also show the second comb drive member being movable relative to the first comb drive member from a first position in which the comb drive fingers of the first and second comb drive members are not substantially fully interdigitated to a second position in which the comb drive fingers of the first and second comb drive members are substantially fully interdigitated.

Regarding claim 40, it is noted that Miller et al. also show the first and second springs each extending radially from the axis of rotation (portions connecting 16 and 12).

Regarding claim 41, it is noted that Miller et al. also show a movable structure overlying the substrate, the movable structure including the rotatable member and the second electrostatic drive member and having a center mass at the axis of rotation for inhibiting undesirable movement of the movable structure in response to externally applied accelerations to the microactuator.

Regarding claim 42, it is noted that Miller et al. also show a micromechanical device (Figure 11) comprising a substantially planar substrate (18), a rotatable member (10) overlying the substrate for rotation about an axis of rotation (27) extending perpendicular to the substrate, not more than first and second spaced-apart springs (16, top and bottom), each spring having a first end portion (19, 20) coupled to the substrate and a second end portion coupled to the rotatable member for suspending the rotatable

member over the substrate, and a micromotor (180, 181) carried by the substrate and coupled to the rotatable member for driving the rotatable member about the axis of rotation between first and second positions relative to the substrate.

Regarding claim 43, it is noted that Miller et al. also show the first and second springs each extending radially from the axis of rotation (portions connecting 16 and 12).

Regarding claim 44, it is noted that Miller et al. also show the micromotor being disposed between the first and second spaced-apart springs.

Regarding claim 86, it is noted that Miller et al. also show a micromechanical device comprising a substantially planar substrate, a stationary structure mounted on the substrate, a movable structure overlying the substrate for rotation about an axis of rotation (27) and not more that first and second flexure members (16, top and bottom) extending substantially radially of the axis of rotation, each of the first and second flexure members having a first end portion (19, 20) coupled to the stationary structure at the axis of rotation and a second end portion coupled to the movable structure.

Regarding claim 87, it is noted that Miller et al. also show the at least one flexure member including first and second flexure members, each of the first and second flexure members having a first end portion coupled to the stationary structure at the axis of rotation and a second end portion coupled to the movable structure, the first and second flexure members extending substantially radially from the axis of rotation at an angle to each other.

Regarding claim 88, it is noted that Miller et al. also show a micromotor carried by the substrate and coupled to the movable member for driving the movable member about the axis of rotation.

Regarding claim 89, it is noted that Miller et al. also show the micromotor being an electrostatic microactuator.

Regarding claim 90, it is noted that Miller et al. also show the movable structure is fanlike in shape when viewed in plan.

6. Claims 45-62 are rejected under 35 U.S.C. 102(e) as being anticipated by Fan et al. (5,982,585).

Regarding claim 45, Fan et al. show an electrostatic microactuator (Figure 13) comprising a substantially planar substrate, a rotatable member overlying the substrate for rotation about an axis of rotation (135) extending perpendicular to the substrate, a plurality of electrostatic drive assemblies (left and right) extending substantially radially from the axis of rotation, each of the plurality of electrostatic drive assemblies having a first electrostatic drive member (131) mounted on the substrate and a second electrostatic drive member (132) coupled to the rotatable member, and first and second spaced-apart springs (133, left and right), each spring having a first end portion coupled to the substrate and a second end portion coupled to the second electrostatic drive member for suspending the second electrostatic drive member and the rotatable member over the substrate, each second electrostatic drive member being movable in a direction of travel about the axis of rotation between first and second positions relative to the respective first electrostatic drive member, the rotatable member, the plurality of

electrostatic drive assemblies and the first and second springs when viewed together in plan having the shape of a fan.

Regarding claim 46, it is noted that Fan et al. also show the rotatable member, the plurality of electrostatic drive assemblies and the first and second springs subtending an angle of approximately 180° or less about the axis of rotation.

Regarding claim 47 it is noted that Fan et al. also show the rotatable member, the plurality of electrostatic drive assemblies and the first and second springs subtend an angle of approximately 90° about the axis of rotation.

Regarding claim 48, it is noted that Fan et al. also show each of the first and second electrostatic drive members being a comb drive member having comb drive fingers.

Regarding claim 49, it is noted that Fan et al. also show the comb drive fingers of the first and second comb drive members being not substantially fully interdigitated when in the first and position and the comb drive fingers of the first and second comb drive members are substantially fully interdigitated when in the second position.

Regarding claim 50, it is noted that Fan et al. also show the first and second springs each extending radially from the axis of rotation.

Regarding claim 51, it is noted that Fan et al. also show an electrostatic microactuator comprising a substantially planar substrate, a rotatable member overlying the substrate for rotation about an axis of rotation extending perpendicular to the substrate, a plurality of comb drive assemblies extending substantially radially from the axis of rotation, each of the plurality of comb drive assemblies having a first comb drive

member mounted on the substrate and a second comb drive member coupled to the rotatable member, and first and second spaced-apart springs, each spring having a first end portion coupled to the substrate and a second end portion coupled to the second comb drive member for suspending the second comb drive member and the rotatable member over the substrate, each of the first and second comb drive members being provided with comb drive fingers, the comb drive fingers of the second comb drive member (131) having respective distal ends which extend along an imaginary line that does not intersect the axis of rotation (134).

Regarding claim 51, it is noted that Fan et al. also show the comb drive fingers of the first comb drive member (132) having respective distal ends which extend along an imaginary line that does not intersect the axis of rotation (134).

Regarding claim 53, it is noted that Fan et al. also show the second comb drive member being movable relative to the first comb drive member from a first position in which the comb drive fingers of the first and second comb drive members are not substantially fully interdigitated to a second position in which the comb drive fingers of the first and second comb drive members are substantially fully interdigitated.

Regarding claim 54, it is noted that Fan et al. also show the first and second springs (133, left and right) each extending radially from the axis of rotation.

Regarding claim 55, it is noted that Fan et al. also show the rotatable member, the plurality of comb drive assemblies and the first and second springs when viewed together in plan have the shape of a fan.

Regarding claim 56, it is noted that Fan et al. also show the plurality of comb drive assemblies and the first and second springs when viewed together in plan subtending an angle of approximately 180° or less about the axis of rotation.

Regarding claim 57, it is noted that Fan et al. also show an electrostatic microactuator comprising a substantially planar substrate, a rotatable member overlying the substrate for rotation about an axis of rotation (135) extending perpendicular to the substrate, first and second linear micromotors (left and right) and a first coupler (133, left) for securing the first linear micromotor to the rotatable member and a second coupler (133, right) for securing the second micromotor to the rotatable member for rotating the rotatable member about the axis of rotation.

Regarding claim 58, it is noted that Fan et al. also show the axis of rotation extending through the rotatable member.

Regarding claim 59, it is noted that Fan et al. also show each of the micromotors being an electrostatic micromotor having at least one comb drive assembly (131, 132).

Regarding claim 60, it is noted that Fan et al. also show the first and second couplers comprising first and second coupling springs.

Regarding claim 61, it is noted that Fan et al. also show the first and second micromotors being symmetrically disposed about the rotatable member.

Regarding claim 62, it is noted that Fan et al. also show the direction of linear travel of the first micromotor being parallel to the direction of linear travel of the second micromotor.

Information on How to Contact USPTO

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

DDL
June 4, 2002

Dang D. Le